Notes from the 11/01/05 MI BPM Upgrade Meeting
Bob Webber
These notes can be found in Beams docDB #1526.

Agenda as announced:

Emphasis this week: Hardware, software and schedule for a working system in the MI40 building. Please come prepared to discuss any issues or questions that need to be answered.

Proposed agenda:

Project Announcements : Bob and Steve
Combiner Board status : Marv, Tim, Bob Forster, Vince
VME crate purchase status : Bob Forster
MI30 status : Peter, Bob Webber
Transition Board status, bill of materials : Manfred
Transition Board crate, controller, backplane : Adim, Vince, Manfred
Signal cables : Bob Forster, Adim, Marv
Service Building survey/BLM coordination : Tim, Marv
Front-end software : Luciano
MVME processor status : Luciano, Margaret, Steve
Online software : Brian
Validation: Rob Kutschke
MI BPM requirements/MI issues : Dave and Alberto
Timing Board : Bill
AOB

0. Announcements - Bob and Steve

- There are 11 weeks to January 15. So we should proceed as fast as possible to procure items, finish designs, test prototypes, etc.

1. Front-end software : Luciano
MVME processor status : Luciano, Margaret, Steve

- Even with 4 days of C++ classes taking most of last week there was progress in the front-end software. FTP for the TeV BPM now works at 500 Hz. This code can now be ported to and used by the MI BPM FE software.

- Last week there was work done on TBT measurements. No success yet, issues with decimation, multiple Graychip channels, burst count, 2.5 MHz, 53 MHz, multiple data points when only single points are expected, etc. Luciano and Steve are working with Charlie (and Peter) to sort out and try to understand the issues involved here.

- Charlie is working on the code for the PMC card for the MVME 5500. We discussed ordering 11+5 PMC cards to include the MI8 upgrade.

- There was some discussion about whether the FE software was ready yet for a setup in MI40. Some capability exists already and it would be useful to have a setup in the accelerator. The teststand on FCC3 should of course remain in use for debugging under more controlled conditions. There was some discussion to be continued later about having signals in the FCC3 teststand that can be used to verify/validate data coming from the digitizers.

- The 11 MVME 5500 boards are at Fermilab.

- Steve Foulkes showed some timing data to read out 12000 turns and showed that 10 boards can be read out in 307 ms, comfortably less than the 500 ms budget for this. His results are available in beams-doc-

2. Combiner Board status : Marv, Tim, Bob Forster, Vince
   VME crate purchase status : Bob Forster

- The non-combiner combiner boards are ordered and a delivery date of November 8 is given.

- A box from GAMA Electronics has been received with 124 assembled combiner boards. They still need to be checked out to ensure that they have correct parts, etc. Unfortunately, no spare parts were received (yet). There is a need for additional parts, both to assemble the non-combiner combiner boards and to fix any problems with the combiner boards. Bob is continuing to pursue this with GAMA.

- The VME subrack order has been placed, Bob informs me, as we were meeting. The delivery date is early December. This order includes subracks for the MI8 upgrade.

3. Transition Board status, bill of materials : Manfred
   Transition Board crate, controller, backplane : Adim, Vince, Manfred
   Signal cables : Bob Forster, Adim, Marv
   Service Building survey/BLM coordination : Tim, Marv

- All parts for the transition boards have been ordered and some parts have already arrived.

- The layout is being completed and a final review of the layout is planned for November 10.

- The prototype was modified to include a transformer to reduce the noise (as described by Manfred last week) and measurements are being made on the bench and then with the beam to verify and validate that the noise is reduced as expected.

- Stefano is working on the firmware and is familiarizing himself with the system.

- The transition board crate backplane will be a standard VME backplane with whatever mods/additions will be needed to allow for the connection of the input signals on the back of the transition boards.

- The transition board crates requisition is being written and will be placed soon. Quotes have been received. The power supplies are here already.

- Adim showed some cable specs for all of the signal, timing, and miscellaneous cables needed for this and the MI8 systems. This document can be found in beams-doc-2012. Many of the cables can be delivered in about a week.

4. Online software : Brian

- Design work continues on the application (I6-like) to feed in MI BPM state messages to the system. A first version should be available in a couple of weeks.

- Brian is about 2/3 finished with library modifications required for the new system. About a week away from a working version.

- An R25-equivalent or some functionality in R25 will be required as well as we start to put systems together and want to control them.

5. Validation: Rob Kutschke

- Waiting for data.

6. Timing Board : Bill

- Waiting for parts and for the boards. Working on the daughter cards as well.

- Hope to have one board assembled next week. Asked (encouraged) to build two boards - one for FCC3 teststand and one for MI40 setup. Bill will have to think about how to get parts, etc. to build a second board quickly.

7. AOB

- Wide aperture BPM measurements have been made by Jim Fitzgerald and these can

be found in beams-doc-2007.